

PendoTECH Dual Wavelength Photometer Monitor/Transmitter Mounting Instructions

1. Introduction

The PendoTECH Compact Photometer and Transmitter allows users to obtain inline absorbance and turbidity measurements with single use flow cells to reduce the risk of contamination. The PendoTECH Photometer is available as a standalone bench top unit or in a panel mount model. When integrating the PendoTECH photometer into an electrical cabinet it is imperative to have the proper configuration in order to allow the fiber optic cables to pass through the enclosure. The following technical note describes how to properly mount a PendoTECH Photometer to ensure accurate and reliable measurements.

2. Specifications

Photometer specifications are as follows (also found on product data sheet):

Optical Configuration	Absorbance, with LED Light Source and UV Silicone Photodiode: Internal Source Reference (wavelengths available from 240-1100) LED Lifetime > 5 years
Transmitter Box	<ul style="list-style-type: none"> Optical connectivity via SMA905 Power by 12 mm plug (bench mount) or screw terminals (panel mount) Dimensions (WxDxH): 4" x 4.75" x 2.59"
Power Requirement	20-30 Volts DC (100-250VAC to 24VDC supply included with bench top unit)
Output Signal	<ul style="list-style-type: none"> 4-20mA sourcing with 400ohm maximum at 24VDC via screw terminals (panel mount) or field wireable connectors (bench top) Scaled 0-2 AU

3. Ordering Information

There are two versions of the PendoTECH Photometer available. A standalone benchtop unit and a panel mount version for integration into an electrical cabinet or skid. Ordering information for both units can be found below.

Generic PendoTECH Part #: SPEC-(L,P)-(1,2)-(SU,RU)-XXX-YYY

- Specify L, P, or F
 - L = Lab
 - P = Panel
 - N = No flange (for flush mount)
- Specify 1 or 2
 - 1 = Single wavelength unit
 - 2 = Dual wavelength unit
- Specify SU or RU
 - SU = Optical couplers for use with single use flow cell
 - RU = Optical couplers for use with reusable flow cell
- Specify XXX and YYY (if applicable)
 - XXX = Wavelength # 1, i.e. 280 nm
 - YYY = Wavelength # 2, i.e. 880 nm

For example, a panel mount, dual wavelength unit, measuring 280 nm and 880 nm with single use couplers would be ordered with the following part number: **SPEC-P-2-SU-280-880**.

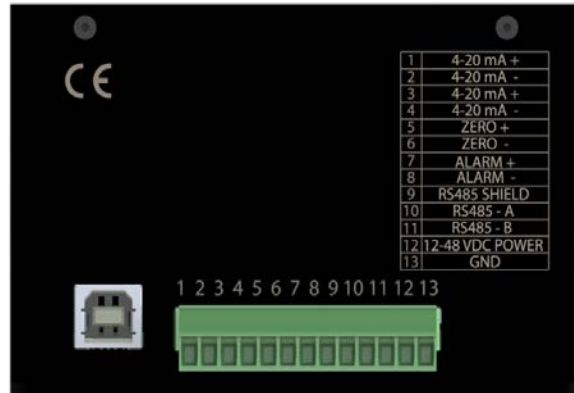
Technical Note

4. Electrical Information

The following sections describe the proper wiring configuration for the PendoTECH dual wavelength photometer and transmitter. Complete description of provided terminal block can be found in the image below.

3.1 Connect Power/Ground

For panel-mounted systems, a 13-position terminal block connector is provided. Use a small flathead screwdriver to loosen the screw and insert a **NON-ENERGIZED** 24 VDC lead (with the end stripped so that the metal wire is exposed) to position 12, and tighten the screw to secure the lead. Repeat the same procedure for the securing the grounding lead to position 13.



3.2 Connect 4-20 mA Output

For dual channel units, pins 1 and 2 correspond to the transmitter's first wavelength (lower) and pins 3 and 4 correspond to the second wavelength (higher).

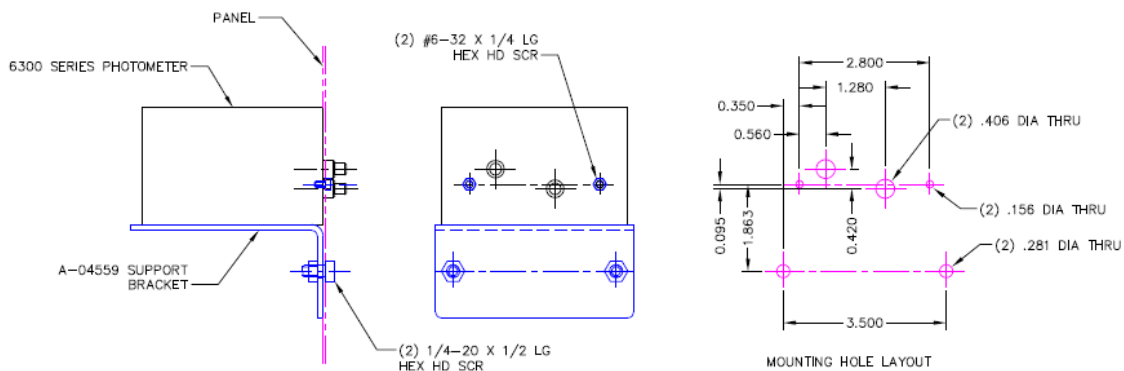
5. Mounting Instructions

There are two configurations for mounting the PendoTECH Photometer.

5.1 Flush Mount

Note: N version required for this configuration

Mount the PendoTECH Photometer directly on an interior wall of the enclosure with two fiber optic connectors protruding through wall. Panel mount versions come standard with screw holes on the front face of the unit. These are used to easily mount the bottom of the photometer flush on the interior cabinet wall. Refer to drawing below for proper configuration of holes when flush mounting the photometer. A larger version of the configuration drawing is included in the appendix.



Flush Mount Hole Configuration

As detailed above, a total of six holes need to be drilled through the cabinet wall in order to flush mount the unit. Hardware, including shelf, is included in order.

- (2) Mounting Screws: 0.156 DIA thru
 - #6-32 x 1/4 LG HEX HD SCR
- (2) Holes for fiber optic connectors: 0.406 DIA thru
- (2) Support bracket screws: 0.281 DIA thru
 - 1/4 - 20 x 1/2 LG HEX HD SCR

Technical Note

The fiber optic cables will connect directly to the optical connectors protruding through the cabinet wall allowing for external connection to a single use, or reusable, flow cell. A remote tare button must be installed in order to tare the unit without opening the cabinet.

5.2 Din Rail Mount

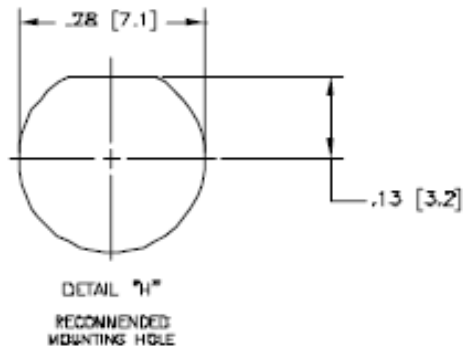
Note: P version required for this configuration

The Photometer can also be mounted on a DIN rail, within the cabinet, as required by the end user. If the Photometer is completely integral to the cabinet, the following parts will need to be ordered in order to route the fiber optic cables through the cabinet wall and to the unit.

1. SPEC-OC-FIBER: One Replacement Fiber Optics Cable (3ft / 1M) x 2
 - Two additional 3-foot fiber optic cables.
2. SPEC-OC-PANEL: Panel mount SMA-905 connector (for pass through) x 2
 - SMA905 bulkhead pass through connector. Fiber optic cables attach to each side of bulkhead pass through connector. Image of bulkhead connector is shown below.



The parts listed above allow for the fiber optic cables to be connected without entry into the cabinet. Additionally, the panel mount unit is fabricated with a molded flange for integration with a DIN rail. A detailed drawing of the unit, with molded flange, can be found in section 5 of this document. Only two holes need to be drilled in the cabinet wall in order to install the panel mount connector referenced above. Refer to drawing below for hole sizes when using SMA-905 pass through connectors. The full drawing can be found in the appendix.



SMA Bulkhead Connector Drawing

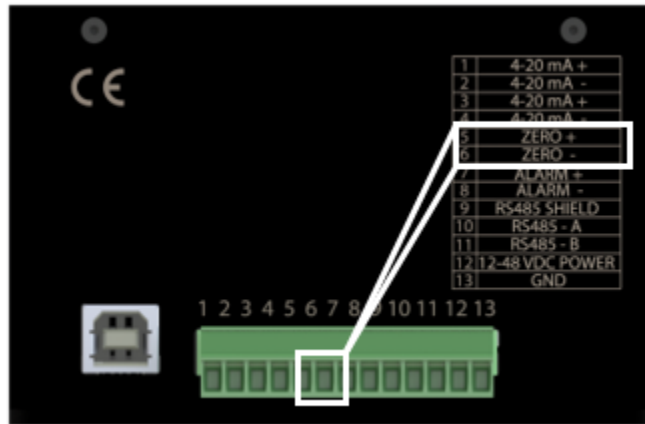
The fiber optical cables on the internal side of the bulkhead pass through will be connected to the PendoTECH photometer which is permanently mounted within the cabinet. The fiber optic cables on the external side of the bulkhead pass through will connect to either a single use, or reusable, flow cell.

6. Remote Tare

The PendoTECH photometer are designed to be zeroed (tared) each time they are used. The unit should read 4 mA after being tared. Properly taring the unit is essential to ensure accurate results and consistency between uses. Please refer to product user guide for specific operational instructions when taring device.

Technical Note

As access to the photometer will be restricted due to its location in the electrical cabinet a remote tare button must be established in order to tare the unit without opening the cabinet. Relevant screw terminals for sending remote tare are detailed in the image below.



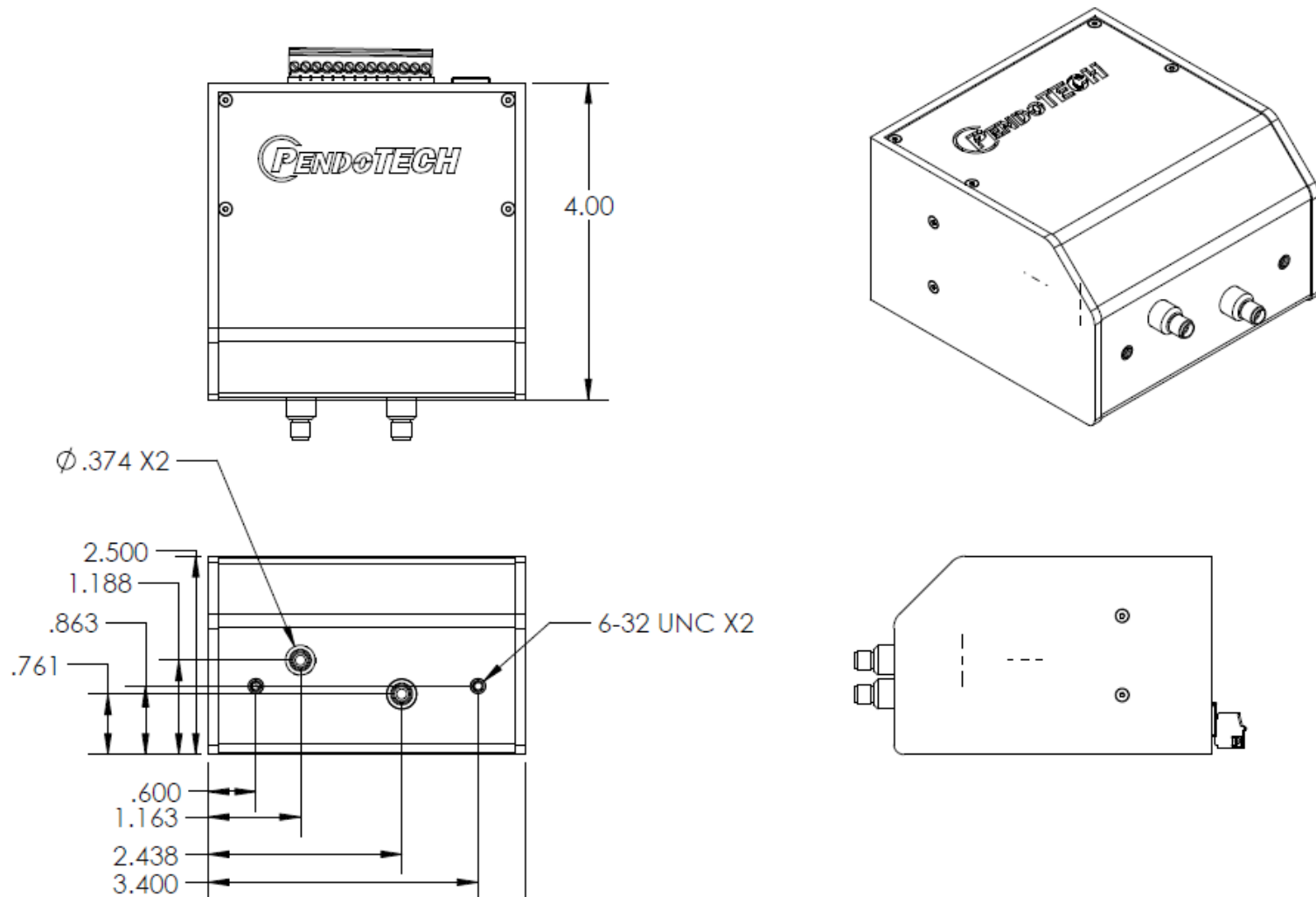
A physical tare button should be installed on the exterior of the cabinet or included on the panel HMI. The tare functions as a dry contact relay. When the relay is closed the device will be set to zero. The recommended length of time to close the relay for is 3 seconds.

Note: Additional drawings can be found in the appendix (Section 7)

Technical Note

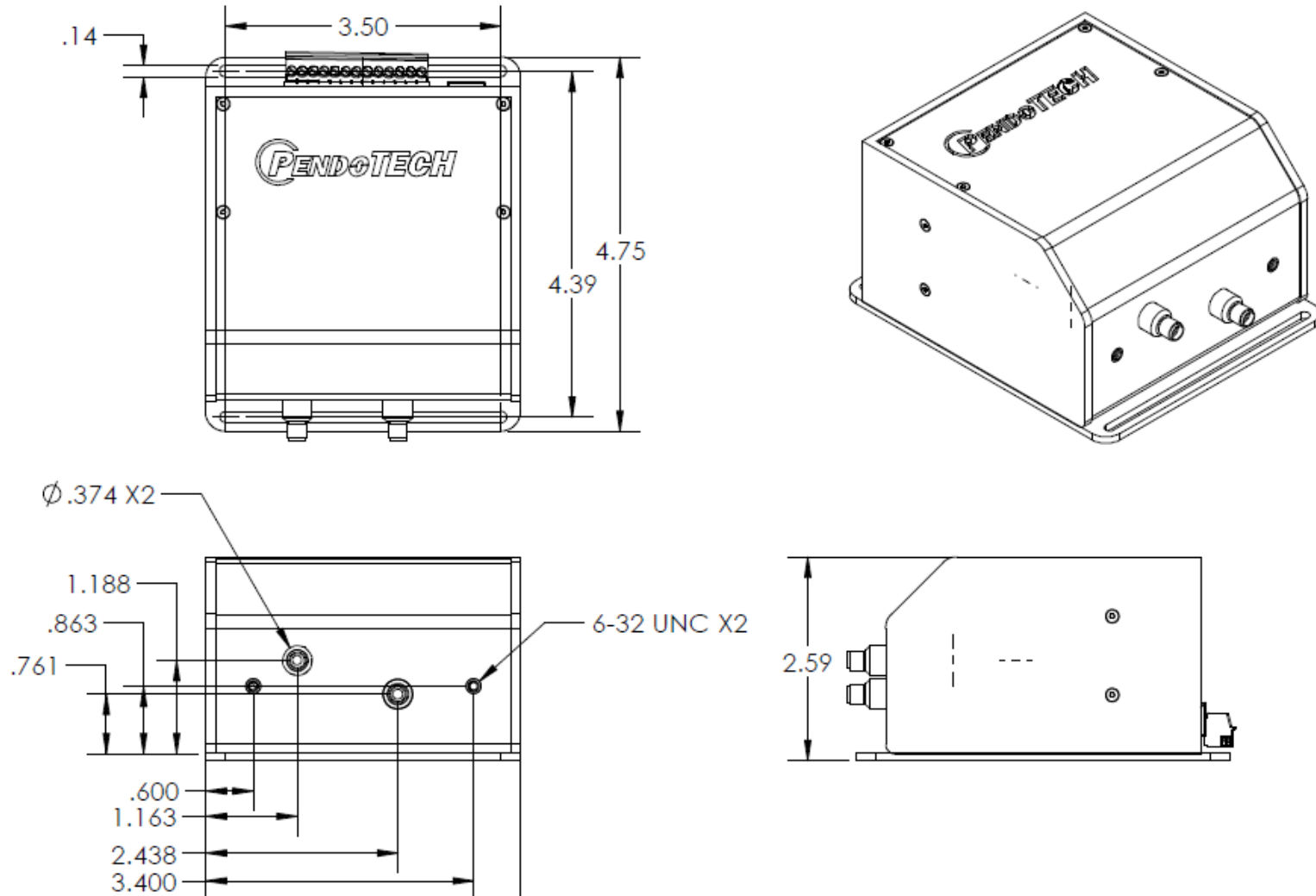
7. Appendix (Relevant Drawings)

7.1 Photometer Dimensions: N version



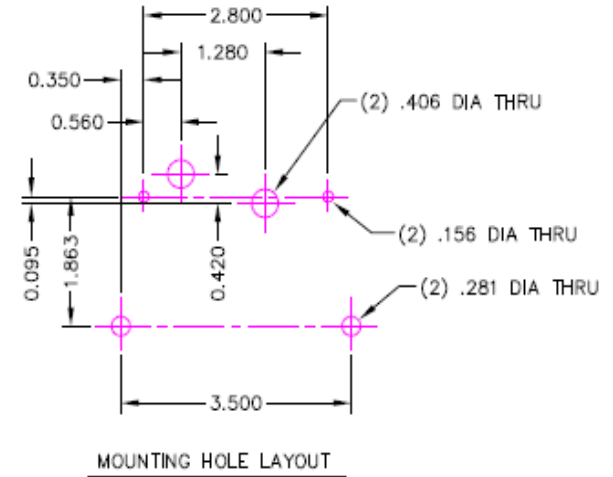
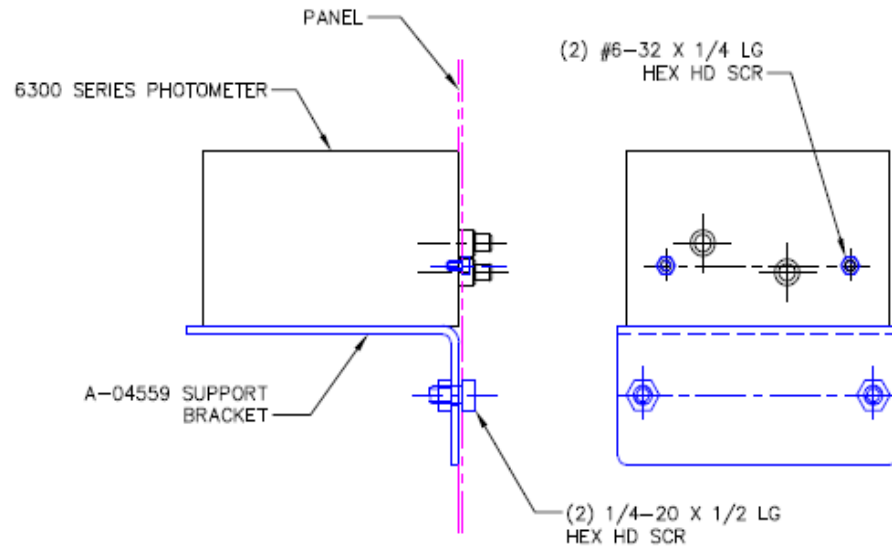
Technical Note

7.2 Photometer Drawing: P Version



Technical Note

7.3 Support Shelf Drawing



Technical Note

7.4 Bulkhead connector

